Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	DOCKET FILE COPY ORIGINAL
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GARMIN INTERNATIONAL, INC.	)	
	)	RM - _____
Amendment of Sections 95.29(f)(1),	)	
95.119 (a)(1), 95.183(a)(4), 95.631(a), (e),	)	
and (f), 95.633(a) and 95.181 To Authorize	)	
Manufacture, Sale and Use Of GPS	)	
Transmission Enhanced General Mobile	)	
Radio Service (GMRS) Units	)	

To The Commission:

PETITION FOR RULE MAKING

Garmin International, Inc. ("Garmin"), pursuant to Section 1.401 of the Commission's rules, by its attorneys, hereby petitions the Commission to amend certain provisions of the Part 95 Personal Radio Service rules relating to the General Mobile Radio Service ("GMRS") to authorize the manufacture, sale and use of enhanced GMRS mobile devices capable of transmitting and receiving a brief data burst containing Global Positioning System ("GPS") location information, and user generated text messages on GMRS, non-repeater channels. The proposed digital data transmissions should have the same limitations as those applicable to the transmission of GPS data and text messaging recently adopted in another radio service governed by Part 95, the Family Radio Service ("FRS").[1]

[1] Garmin International, Inc., Amendment of Sections 95.193(a) and 95.631(d) to Authorize Manufacture, Sale and Use of GPS Transmission Enhanced Family Radio Service Units, and Amendment of Sections 95.193(a), 95.193(b), and 95.631(d) of the Commission's Rules in the Family Radio Service, *Report and Order*, WT Docket No. 01-339, 18 FCC Rcd 2349 (2003) ("*Report and Order*").

In its recent modifications of the FRS rules to authorize the transmission of GPS data and text messaging, the Commission found that the rule modifications were in the public interest because the modifications allowed a new and incidental use for FRS – adding a GPS capability to provide a significant enhancement to a service that users could employ to locate lost or injured persons. In addition, the Commission found that text messaging would enhance the FRS units' usefulness to the public. Moreover, the Commission noted reasonably priced equipment was available to allow the public to take advantage of technological developments in equipment and services that have occurred since the authorization of the FRS.[2] In a Separate Statement associated with the *Report & Order*, Commissioner Abernathy stated: "By allowing our rules to accommodate such new technological advancements and by encouraging innovation by manufacturers, consumers benefit from the latest technological advancements."[3] The benefits provided to the public by authorizing enhanced FRS radios as requested by Garmin will be even greater in the GMRS because the higher power GMRS signals generally are capable of traveling farther than FRS signals and will provide an essential and beneficial location feature over a much larger area.

I. INTRODUCTION

1. Garmin is an industry leader in GPS technology and an innovator in consumer electronics for marine, aviation, automotive and recreational markets. Utilizing its expertise, Garmin was instrumental in having the FRS rules amended in order to permit the manufacturing and marketing of inexpensive, handheld GPS-enhanced FRS transceivers capable of both transmitting GPS location information on FRS frequencies and graphically displaying the GPS

2 *Id.* at ¶28

3 *Id.* Separate Statement of Commissioner Kathleen Q. Abernathy.

location information on a receiving radio.[4] Garmin's RINO 110 and RINO 120 GPS-enhanced FRS radios have met with great success in the market place. The widely-accepted and sought after GPS transmission enhancement allows FRS users to transmit his or her location to other FRS users, and allows other FRS users to query or poll another GPS-enhanced unit. The transmission is received by a Garmin GPS-enhanced FRS unit which displays the location information. In all other respects, the GPS-enhanced FRS units function similar to any other FRS unit (*i.e.*, a "push to talk" radio unit). Garmin proposes to extend these location capabilities, found to be in the public interest in the FRS, to GMRS mobile stations.

II. GMRS RULE MODIFICATIONS

2. Garmin seeks to amend Sections 95.29(f)(1), 95.119 (a)(1), 95.183(a)(4), 95.631(a), (e), and (f), 95.633(a), and 95.181 of the Commission's GMRS rules to revise the scope of permissible communications and emission types for GMRS mobile stations,[5] operating

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[4] GPS is a satellite-based navigation and positioning system consisting of a constellation of 28 orbiting satellites. The satellites and their ground control and monitoring stations are maintained and operated by the United States Department of Defense. The satellites have worldwide coverage and the Department of Defense does not charge users for access to the satellite signals. By receiving radio signals from four or more satellites, a GPS receiver can calculate its position in three dimensions-- latitude, longitude and altitude-- and can also calculate the speed at which the receiver is moving, the direction in which the receiver is moving and the precise time of day. The satellites continuously transmit precisely timed radio signals using extremely accurate atomic clocks. A GPS receiver calculates distances from the satellites in view by determining the travel time of a coded signal from the satellite to the receiver. The receiver then triangulates its position using its known distance from each satellite and calculates latitude, longitude and altitude. The satellites also provide highly accurate timing information which can be displayed by a GPS receiver in the form of the time of day. Prior to May 2000, the U.S. Department of Defense intentionally degraded the accuracy of civilian GPS signals in a process known as Selective Availability ("SA"). SA variably degraded GPS position accuracy to a radius of 100 meters. On May 2, 2000, the U.S. Department of Defense turned off SA. With SA removed, a GPS receiver can calculate its position to an accuracy of 10 meters or less. The removal of SA has significantly enhanced the utility of GPS.

[5] A GMRS mobile station transmits while moving or during temporary stops at unspecified points. *See* 47 C.F.R. § 95.23.

on non-repeater GMRS frequencies,[6] so they are authorized to transmit GPS location information, and text messaging, using emission type F2D in a digital data burst of not more than one second. Garmin proposes that the modified GMRS provisions mirror the new FRS rules as recently adopted by the Commission. Accordingly, the amended GMRS rules should provide, among other things, that:

- Transmission of GPS location data be limited to GMRS mobile units that have integrated (*i.e.*, non-detachable) antennas.
- Transmission of GPS location data, utilizing an F2D emission, be limited to an authorized bandwidth of no more than 12.5 kHz.
- The GMRS mobile unit may transmit digital data containing location information, or requesting location information from one or more other GMRS units, or containing a brief text message to another specific GMRS unit.
- Digital data transmissions must be initiated by a manual action or command of a user, except that a GMRS unit receiving an interrogation request may automatically respond with its location.
- Digital data transmissions shall not exceed one second, and shall be limited to no more than one digital transmission within a thirty-second period, except that a GMRS unit may automatically respond to more than one interrogation request received within a thirty-second period.

III. THE PROPOSED RULE AMENDMENTS WILL SERVE THE PUBLIC INTEREST

3. The Commission has already found that modifying the rules for the FRS to authorize GPS-enhanced units and text messaging is in the public interest because of the public

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[6] Garmin's proposal applies only to operations on the 462 MHz non-repeater frequencies. *See* 47 C.F.R. § 95.29(a) and (f).

safety benefits that an FRS unit with a GPS transmission enhancement can provide.[7] Locating lost family members or colleagues, or even just knowing where they are, for example, can be performed with great precision through the transmission of GPS data that can then be reproduced graphically on the receiving GMRS unit. These recognized public benefits should be extended to the GMRS.

4. Amendment of the GMRS rules as proposed by Garmin will greatly enhance the GMRS by providing a simple, non-interfering and non-intrusive means for transmitting accurate and critical location information on certain GMRS channels. The instantaneous transmission of accurate location information over greater areas than that possible by using FRS frequencies would help to protect the safety of lives and property, and provide additional safety and security. All of these goals can be achieved while maintaining the integrity of the GMRS rules and operations, and remaining within the purposes for which the GMRS was created.

5. The purpose of the GMRS is to provide "short-distance, two-way communications to facilitate the activities of licensees and their immediate family members."[8] GMRS is a Part 95 Personal Radio Service, formerly known as Class A Citizens Band. GMRS

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7 *See Report & Order* at ¶ 26 ("In summary, we believe that the public interest will be served by permitting FRS units to transmit location information and FRS user generated text messages.") The Commission recently adopted rules which will require cellular radiotelephone handsets to provide location information in emergencies through either GPS or network-based technology. *See* Revision of the Commission's Rules To Ensure Compatibility With Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, *Third Report and Order*, 14 FCC Rcd 17388 (1999); *see also* Revision to the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, *Report and Order and Further Notice of Proposed Rule Making*, CC Docket No. 94-102, 11 FCC Rcd 18676, 18679 (1996) (Commission recognized the public interest benefits of automatically locating individuals in distress, especially when they are injured or in an unfamiliar environment).

8 47 C.F.R. § 95.1.

was originally available to the general public for personal and business communications.[9] While a license is required to operate in this service[10] licenses are only issued to individuals.[11] Other than the codification of the GMRS rules in 1983, the technical rules governing the GMRS have remained largely unchanged since 1958.[12]

6. Just as in the FRS, this proposed GPS transmission enhancement would allow a GMRS user to transmit his or her location to other GMRS users by a manual action or command that would transmit a digital data burst, lasting *less than one second*, containing location information. A Garmin GPS-enhanced GMRS mobile unit would receive the transmission and present a graphic display for the user. In all other respects, the GPS-enhanced GMRS unit would function just like any other GMRS unit (*i.e.*, a "push to talk" radio unit primarily for two-way voice communications). Because of the potential range of GMRS radios, GPS-enhanced GMRS radios could offer greater protection than GPS-enhanced FRS radios for personal safety.

7. Based on the safeguards of permitting only a one second or less data transmission, limiting the data transmission to no more than once every thirty seconds, and permitting data transmissions on simplex channels only, it is not likely that these transmissions would lead to interference problems or increase spectrum congestion. Allowing a data burst of less than one second in duration in the GMRS on non-repeater channels will neither cause interference to

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9 Update and Codification of the General Mobile Radio Service (GMRS) Rules, *Report & Order, PR Docket No. 82-84,* 54 RR 2d 753 (1983).

10 47 C.F.R. § 95.3.

11 *See* 47 C.F.R. §95.5(a) and (b). Some "non-individuals" licensed before 1987 hold "grandfathered"licenses, *see* 47 C.F.R. § 95.5(c).

12 Update and Codification of the General Mobile Radio Service (GMRS) Rules, *Report & Order, PR Docket No. 82-84,* 54 RR 2d 753 (1983) ¶2.

GMRS or other services, nor will it prevent large numbers of users from sharing the same channels in the same areas. In fact, 47 C.F.R. § 95.631(a) already permits the transmission of data in certain circumstances, and 47 C.F.R. § 95.181(g) of the GMRS rules already allows non-voice communications, the *transmission of an audible analog tone lasting up to 15 seconds.* Garmin's proposal for a less than one second data transmission would not cause interference or increase spectrum congestion; it would, in fact, create additional spectrum efficiency by transmitting critical and accurate location data with a very brief transmission. In addition, permitting text messaging will enhance the usefulness of GMRS units to consumers.[13]

8. The F2D emission to enable the transmission of GPS position information will be restricted to 12.5 kHz to avoid radio frequency interference with other channels. In addition, Garmin will use currently authorized subaudible squelch tones or other methods to identify the GMRS radio from which the GPS information is being sent. By using squelch tones or other methods to identify a transmitting unit, only GMRS radios on the same channel and employing the same identification method (or a unit employing noise squelch) will hear the transmission. Because Garmin will employ squelch tones or other identification methods on GMRS channels, the likelihood of the digital transmission causing interference to other users is, at most, negligible. In the unlikely event that the digital transmission were to cause interference because the same channel and identification method were employed by nearby users, such interference would be less than one second and the transmission would either not be noticeable, or would amount to a mere blip of static on a voice channel.

9. The proposed rule amendments would, in fact, create additional spectrum efficiency by transmitting critical and accurate location data, as well as useful text messages, with a very brief transmission. The proposed amendments are, therefore, consistent with

[13] *See Report and Order*, ¶8.

technological advancements which will not cause harmful interference or increased frequency congestion, and will benefit GMRS users, similar to those benefits recognized by the Commission when it authorized GPS-enhanced FRS units.[14]

IV. SPECIFIC RULE AMENDMENTS PROPOSED

10. In order to provide technologically advanced GPS location information in the GMRS, which capability the Commission has already found to be in the public interest for the FRS, Garmin respectfully requests amendment of the following GMRS provisions (proposed amendments are underlined and in **boldface type**; material to be deleted is ~~lined through~~):

§ 95.29 Channels available.

* * *

(f) Except for a GMRS system licensed to a non-individual, a mobile station or a small base station operating in the simplex mode may transmit on the following 462 MHz interstitial channels:

462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875 and 462.7125

These channels may be used only under the following conditions:

(1) ~~Only~~ **Voice** type emissions may be transmitted~~.~~ **and digital data transmission of location information and text messaging may be transmitted.**

§ 95.119 Station identification.

(a) Except as provided in paragraph (e), every GMRS station must transmit a station identification:

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[14] *Id.*, ¶ 13.

(1) Following the transmission of communications or a series of communications **except that station identification shall not be required following the digital data transmission of location information or text messaging**; and

§ 95.183 Prohibited communications.

(a) A station operator must not communicate:

* * *

(4) Coded messages or messages with hidden meanings ("10 codes" are permissible); **provided, however, that mobile stations operating on frequencies specified at §95.29(a) and (f) may transmit digital data transmission of location information and text messaging.**

§ 95.631 Emission types.

(a) A GMRS transmitter must transmit only emission types A1D, F1D, G1D, H1D, J1LD, R1D, A3E, F3E, G3E, H3E, J3E or R3E. **A mobile station operating on frequencies specified at §95.29(a) and (f) may also transmit emission type F2D.** A non-voice emission is limited to selective calling or tone-operated voice communications. See § 95.181 (g) and (h). **Mobile stations operating on frequencies specified at §95.29(a) and (f) may transmit digital data transmission of location information and text messaging.**

* * *

(e) No GMRS or CB transmitter shall employ a digital modulation or emission **except as noted at §95.631(a).**

(f) No GMRS, CB or R/C transmitter shall transmit non-voice data **except as noted at §95.631(a).**

§ 95.633 Emission bandwidth.

(a) The *authorized bandwidth* (maximum permissible bandwidth of a transmission) for emission type H1D, J1D, R1D, H3E, J3E or R3E is 4 kHz. The authorized bandwidth for emission type A1D or A3E is 8 kHz. The authorized bandwidth for emission type F1D, G1D, F3E or G3E is 20 kHz. **The authorized bandwidth for emission type F2D is 12.5 kHz.**

§ 95.181 Permissible communications.

* * *

(i) A mobile station operating on frequencies specified at §95.29(a) and (f) may transmit digital data containing location information, or requesting location information from one or more other GMRS mobile stations, or containing a brief text message to another specific GMRS mobile unit. Digital data transmissions must be initiated by a manual action or command of a user, except that a GMRS mobile unit receiving an interrogation request may automatically respond with its location. Digital data transmissions shall not exceed one second, and shall be limited to no more than one digital transmission within a thirty-second period, except that a GMRS mobile unit may automatically respond to more than one interrogation request received within a thirty-second period.

IV. CONCLUSION

For the reasons set forth above, Garmin respectfully requests the Commission to amend the GMRS rules, as suggested herein, to provide for the transmission of technologically advanced communications critical to the safety of life and property in the General Mobile Radio Service.

Respectfully submitted,
GARMIN INTERNATIONAL, INC.

By: _____

Larry S. Solomon
SHOOK, HARDY & BACON, LLP
600 14th Street, N.W.
Suite 800
Washington, D.C. 20005
(202) 783-8400
ITS ATTORNEYS

Andrew R. Etkind, Esquire
General Counsel
Garmin International, Inc.
1200 E. 151st Street
Olathe, KS 66062
(913) 397-8200

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